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10/663,163	09/15/2003	Steven M. Bennett	42P15752	2836

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EXAMINER	
TO, JENNIFER N	

ART UNIT	PAPER NUMBER
2195	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/663,163	BENNETT ET AL.	
	Examiner	Art Unit	
	JENNIFER N. TO	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 August 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-58 are pending for examination.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). For example, the specification fails to support the newly added limitation "storage medium" in claims 56-58. The specification only defined the machine-readable medium. Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 30-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5. Claims 30-41 are rejected under 35 U.S.C. 101 because the claimed invention are directed to apparatus claims, but appearing to be comprised of software alone without claiming associated computer hardware required for execution. For example, claims 30, 35, 41 recited resource determinator, resource optimizer, transition type determinator, VMM operation controller, notification receiver, and operation performer are all software modules/functions. Software alone is directed to a non-statutory subject matter.

6. Claims 56-58 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a signal directly or indirectly by claiming a medium and the Specification recites evidence where the computer readable medium is define as a "***wave***" (such as a carrier wave). In that event, the claims are directed to a form of energy which at present the office feels does not fall into a category of invention. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101.

<http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf>

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Shorter (U.S. Patent No. 5063500).

9. As per claim 1, Shorter teaches the invention as claim including method comprising:

identifying a predefined behavior of a virtual machine monitor (VMM) (VM Pool Manager) with respect to one or more virtual machines (VMs) (col. 11, lines 61-64); and

utilizing processor-managed resources associated with the one or more VMs based on the predefined behavior of the VMM (col. 11, line 64 through col. 12, line 63).

10. As per claim 2, Shorter teaches that wherein the predefined behavior of the VMM is any one of a first-time invocation of a VM, a subsequent invocation of a VM, a last invocation of a VM, and a modification of content of a virtual machine control structure (VMCS) associated with a VM (abstract; col. 5, lines 36-56).

11. As per claim 3, Shorter teaches that wherein identifying a predefined behavior of a VMM comprises receiving an indication of the predefined behavior from the VMM (col. 10, lines 52-55; col. 12, lines 20-21).

12. As per claim 4, Shorter teaches that wherein the indication is received via an instruction executed by the VMM (col. 10, lines 52-55; col. 12, lines 20-21).

13. As per claim 5, Shorter teaches that wherein the instruction executed by the VMM is any one of a VM launch instruction, a VM resume instruction, a virtual machine control structure (VMCS) access instruction, and a VMCS clear instruction (col. 10, lines 39-55; col. 11, lines 9-15).

14. As per claim 6, Shorter teaches that wherein identifying a predefined behavior of a VMM comprises determining the predefined behavior of the VMM by logic within a processor (abstract; col. 5, lines 36-55).

15. As per claim 7, Shorter teaches that wherein the logic within the processor is prediction logic (abstract; col. 5, lines 36-55).

16. As per claim 8, Shorter teaches that wherein utilization of processor-managed resources includes at least one of allocation of one or more processor-managed resources, de-allocation of one or more processor-managed resources, verification of data stored in one or more processor-managed resources, invalidation of data stored in one or more processor-managed resources, and loading of data into one or more processor-managed resources (abstract; col. 8, line 67 through col. 9, line 6).

17. As per claim 9, Shorter teaches the invention as claim including a method comprising:

determining that a transition from a virtual machine monitor (VMM) to a virtual machine (VM) is about to occur (abstract; col. 14, lines 47-59);

determining a type of the transition (abstract; col. 14, lines 47-66); and

notifying a processor of the type of the transition (abstract; col. 14, lines col. 14, lines 47-66).

18. As per claim 10, Shorter teaches that wherein notifying the processor comprises executing an instruction associated with the type of the transition (col. 14, lines 59-66).

19. As per claim 11, Shorter teaches that wherein the type of the transition is any one of an initial transfer to the VM and a subsequent transfer to the VM (col. 14, lines 47-66).

20. As per claim 12, Shorter teaches in response to determining that the transition is an initial transfer to the VM, allocating a memory region for a new virtual machine control structure (VMCS) associated with the VM, and requesting the processor to activate the new VMCS (col. 11, line 66 through col. 12, lines 22).

21. As per claim 13, Shorter teaches that wherein requesting the processor to activate the new VMCS comprises executing a VMCS pointer load instruction including a pointer to the new VMCS as an operand (col. 12, line 66 through col. 13, line 11).

22. As per claim 14, Shorter teaches that requesting the processor to initialize the new VMCS (col. 11, lines 9-18).

23. As per claim 15, Shorter teaches that wherein requesting the processor to initialize the new VMCS comprises executing a VMCS clear instruction including the

pointer to the new VMCS as an operand (col. 8, line 59 through col. 9, line 26; col. 13, lines 12-20).

24. As per claim 16, Shorter teaches upon requesting the processor to activate the new VMCS, requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS (col. 11, lines 9-18).

25. As per claim 17, Shorter teaches that wherein requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS comprises executing a VMCS write instruction having an operand that identifies a component of the new VMCS to which data is to be written (figs 6A-6B, 7; col. 11, lines 9-18).

26. As per claim 18, Shorter teaches that in response to determining that the transition is a subsequent transfer to the VM, requesting the processor to update content of a virtual machine control structure (VMCS) (col. 12, lines 54-65).

27. As per claims 19-58, they are rejected for the same reason as claims 1-18 above.

Response to Arguments

28. Applicant's arguments with respect to claims 1-58 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Costa-Robles et al. (U.S. Publication No. 2003/0037089), Costa-Robles et al. (U.S. Patent No. 7191440), and Uhlig et al. teach method and system for switching between VMM to a VM based upon a transition type.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER N. TO whose telephone number is (571)272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

31. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

32. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer N. To
Examiner
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